Hydrodeoxygenation on transition metal phosphides

Xiaoyang Huang, Marco Peroni, Oliver Y. Gutiérrez, Johannes A. Lercher

Technische Universität München, Department of Chemistry and Catalysis Research Center, Lichtenbergstraße 4, 85748 Garching, Germany

Transition metal phosphides are an interesting option as catalyst for hydrodefunctionalization of biomass derived molecules, intrinsically more active than sulfides and more poison tolerant than most base or noble metals \(^1\). As newer synthesis methods have replaced the old high temperature routes, a wider variety of catalytic materials has become available \(^2\). In order to explore catalytic properties beyond the frequently tested NiP, a series of phosphide materials (W, Mo, and Ni) was prepared by a novel route based on the addition of citric acid in the synthesis and explored with respect to the hydrodeoxygenation of palmitic acid as a model compound for algae based feedstocks.

References:

CV: Xiaoyang Huang

Born 28/04/1990. 06/2013: Bachelor Degree in Environmental Engineering, Zhejiang University, China. 04/2015: Joint Master Degree in Industrial Chemistry, National University of Singapore & Technical University of Munich. 05/2015-10/2015: Employed as a research assistant in the Department of Chemistry and Catalysis Research Center, Technical University of Munich. 11/2015:- Research work in Cardiff University, UK, in the research field of Hydroxymethylfurfural oxidation on gold nanoparticles.